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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,689	08/11/2003	Yi-Chen Chang	10870-US-PA	1688

31561 7590 11/15/2007

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER	
BODDIE, WILLIAM	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
11/15/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USA@JCIPGROUP.COM.TW

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)	
	10/604,689	CHANG ET AL.	
	Examiner	Art Unit	
	William L. Boddie	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 07 September 2007.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1,2,4-7 and 11-19 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,2,4-7 and 11-19 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 11 August 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In an amendment dated, March 7th, 2007 the Applicant amended claims 1 and 18-19. Currently claims 1-2, 4-7 and 11-19 are pending.

Response to Arguments

2. Applicant's arguments filed September 7th, 2007 have been fully considered but they are not persuasive.

3. On page 15 of the Remarks, the Applicants argue that Dougherty fails to teach or suggest shadow pixels that emit electromagnetic radiation in the invisible part of the spectrum.

4. The Examiner must respectfully disagree. Dougherty explicitly discloses, using an invisible ink, such as infrared ink in column 5, lines 35 through 37. The Examiner fails to see how Dougherty could be anymore clear about the nature of the ink. As such the disclose ink of Dougherty is seen as satisfying the limitation requiring that the shadow pixels emit invisible electromagnetic radiation.

Further arguments but forth by the Applicants have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-2, 4-7, and 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagisawa et al. (US 6,965,377) in view of Dougherty et al. (US 6,076,734).

With respect to claim 1, Yanagisawa discloses a pixel array (fig. 8 for example) for a non-touch panel input device (fig. 2), wherein the pixel array at least comprises a plurality of first pixel structures (32xi and 32xi+1 in fig. 8) with each pixel structure at least comprising:

a sub-pixel (display pixel in fig. 8), adapted for displaying a color in the visible light spectrum (para. 45); and

a first strip-shaped shadow pixel (group of dots aligned along the y-axis in 32xi for example; each individual dot can be seen as an individual shadow sub-pixel; when combined they form a shadow pixel), longitudinally positioned on and extending along a first side of the sub-pixel (clear from fig. 8), wherein the first strip-shaped shadow pixel emits electromagnetic radiation either in a first electromagnetic radiation state or in a second electromagnetic radiation state (para. 103, disclose that the dot for a "0" can be a different color than the "1" dot, the use of different wavelengths is equivalent to different radiation states); and

a second strip-shaped shadow pixel pixel (group of dots aligned along the x-axis in 32xi for example), latitudinally positioned on and extending along a second side of the sub-pixel (clear from fig. 8), wherein the second strip-shaped shadow pixel emits electromagnetic radiation either in a third electromagnetic radiation state or in a fourth electromagnetic radiation state such that the third and the fourth electromagnetic

radiation state are different from each other (para .103, disclose that the dot for a "0" can be a different color than the "1" dot, the use of different wavelengths is equivalent to different radiation states),

wherein a position of the sub-pixel can be determined by detecting the first electromagnetic radiation state or the second electromagnetic radiation state of the electromagnetic radiation emitted from the first strip-shaped shadow pixel and the third electromagnetic radiation state or the fourth electromagnetic radiation state of the electromagnetic radiation emitted from the second strip-shaped shadow pixel (para. 85).

Yanagisawa does not expressly disclose, wherein the electromagnetic radiation is in the invisible portion of the light spectrum.

Dougherty discloses encoding data using a material capable of producing electromagnetic radiation in the invisible portion of the light spectrum (note IR1 in figs. 7 and 8, also col. 10, lines 33-45).

Dougherty and Yanagisawa are analogous art because they are both from the same field of endeavor namely, encoding information onto panel displays for sensing by a corresponding sensor.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the dot color of Yanagisawa with the infrared color disclosed by Dougherty.

The motivation for doing so would have been to make the dots invisible to the user (Dougherty; col. 5, lines 35-37), thus not distracting the user from the image being displayed.

With respect to claim 2, Yanagisawa discloses, the pixel array of claim 1 (see above), wherein the first strip-shaped shadow pixel and the second strip-shaped pixel are fabricated using a material capable of producing electromagnetic radiation (para. 82).

Yanagisawa does not expressly disclose, wherein the electromagnetic radiation is in the invisible portion of the light spectrum.

Dougherty discloses encoding data using a material capable of producing electromagnetic radiation in the invisible portion of the light spectrum (note IR1 in figs. 7 and 8, also col. 10, lines 33-45).

Dougherty and Yanagisawa are analogous art because they are both from the same field of endeavor namely, encoding information onto panel displays for sensing by a corresponding sensor.

At the time of the invention it would have been obvious to replace the dot color of Yanagisawa with the infrared color disclosed by Dougherty.

The motivation for doing so would have been to make the dots invisible to the user (Dougherty; col. 5, lines 35-37), thus not distracting the user from the image being displayed.

With respect to claim 4, Yanagisawa and Dougherty disclose, the pixel array of claim 1 (see above).

Yanagisawa further discloses, wherein the first shadow pixel in the first electromagnetic radiation state has a length or width different from the first shadow pixel

in the second electromagnetic radiation state (para. 102, discloses the use of different widths and/or lengths of dots to encode information).

With respect to claims 5 and 12, Yanagisawa discloses, the pixel array of claim 1 (see above).

Yanagisawa does not expressly disclose, different reflectivities amongst the two radiation states.

Daugherty discloses, wherein the first and third electromagnetic radiation states have a reflectivity different from the second and fourth electromagnetic radiation states (col. 10, lines 16-32; discloses the measuring of the different reflected intensities of the different colored inks and using this measurement to decode the values).

At the time of the invention it would have been obvious to replace the dot color of Yanagisawa with the infrared color disclosed by Dougherty.

The motivation for doing so would have been to make the dots invisible to the user (Dougherty; col. 5, lines 35-37), thus not distracting the user from the image being displayed.

With respect to claim 6, Yanagisawa and Dougherty disclose, the pixel array of claim 1 (see above).

Yanagisawa further discloses, wherein the first shadow pixel in the first electromagnetic radiation state radiates with a wavelength different from the first shadow pixel in the second electromagnetic radiation state (para. 103, disclose that the dot for a "0" can be a different color than the "1" dot).

With respect to claim 7, Yanagisawa and Dougherty disclose, the pixel array of claim 1 (see above).

Yanagisawa further discloses, wherein the first shadow pixel in the first electromagnetic radiation state is fabricated using a material different from the first shadow pixel in the second electromagnetic radiation state (para. 103; different colors for 0's and 1's would require different inks in order to radiate different wavelengths of light).

With respect to claim 11, Yanagisawa and Dougherty disclose, the pixel array of claim 1 (see above).

Yanagisawa further discloses, wherein the second shadow pixel in the third electromagnetic radiation state has a length or width different from the second shadow pixel in the fourth electromagnetic radiation state (para. 102, discloses the use of different widths and/or lengths of dots to encode information).

With respect to claim 13, Yanagisawa and Dougherty disclose, the pixel array of claim 1 (see above).

Yanagisawa further discloses, wherein the second shadow pixel in the third electromagnetic radiation state radiates with a wavelength different from the second shadow pixel in the fourth electromagnetic radiation state (para. 103, discloses that the dot for a "0" can be a different color than the "1" dot).

With respect to claim 14, Yanagisawa and Dougherty disclose, the pixel array of claim 1 (see above).

Yanagisawa further discloses, wherein the third electromagnetic radiation state is fabricated using a material different from the fourth electromagnetic radiation state (para. 103; different colors for 0's and 1's would require different inks in order to radiate different wavelengths of light).

With respect to claim 15, Yanagisawa and Dougherty disclose, the pixel array of claim 1 (see above).

Yanagisawa further discloses, wherein the pixel array furthermore comprises a plurality of second pixel structures (32yj, 32yj+1 in fig. 8) with each second pixel structure at least having a sub-pixel without a first shadow pixel (note the lack of y-direction dots in these structures) such that the sub-pixel in each second pixel structure is located in a position corresponding to the sub-pixel of the first pixel structure (seems clear from fig. 8 that the display pixels are located in the same position regardless of dot array used).

With respect to claim 16, Yanagisawa and Dougherty disclose, the pixel array of claim 15 (see above).

Yanagisawa further discloses, wherein each second pixel structure furthermore comprises a second shadow pixel (x-direction dots in 32yj, 32yj+1) positioned on the other side of the sub-pixel corresponding to the second shadow pixel in the first pixel structure (56 in fig. 5c).

With respect to claim 17, Yanagisawa discloses, the pixel array of claim 16 (see above), wherein the second shadow pixel is fabricated using a material capable of producing electromagnetic radiation (para. 82).

Yanagisawa does not expressly disclose, wherein the electromagnetic radiation is in the invisible portion of the light spectrum.

Dougherty discloses encoding data using a material capable of producing electromagnetic radiation in the invisible portion of the light spectrum (note IR1 in figs. 7 and 8, also col. 10, lines 33-45).

Dougherty and Yanagisawa are analogous art because they are both from the same field of endeavor namely, encoding information onto panel displays for sensing by a corresponding sensor.

At the time of the invention it would have been obvious to replace the dot color of Yanagisawa with the infrared color disclosed by Dougherty.

The motivation for doing so would have been to make the dots invisible to the user (Dougherty; col. 5, lines 35-37), thus not distracting the user from the image being displayed.

With respect to claim 18, Yanagisawa discloses, a non-touch panel input device (fig. 2), comprising:

a display panel (11, 21 in fig. 2), comprising a plurality of pixel structures, at least some of the pixel structures each having at least two shadow pixels that are perpendicularly configured one to another (longitudinal and latitudinal rows of dots in fig. 8; para. 84), wherein the shadow pixels are capable of emitting signals containing location information (para. 103); and

a sensor (2 in fig. 1) suspended over the display panel (11, 21 in fig. 1), wherein the sensor is capable of receiving the signals from the shadow pixel to find the location

information (clear from fig. 1) by which the location of the sensor relative to the display can be obtained (para. 85, for example).

Yanagisawa does not expressly disclose, wherein the signals emitted by the shadow pixels are in the invisible part of the electromagnetic spectrum.

Dougherty discloses encoding data using a material capable of producing electromagnetic radiation in the invisible portion of the light spectrum (note IR1 in figs. 7 and 8, also col. 10, lines 33-45).

Dougherty and Yanagisawa are analogous art because they are both from the same field of endeavor namely, encoding information onto panel displays for sensing by a corresponding sensor.

At the time of the invention it would have been obvious to replace the dot color of Yanagisawa with the infrared color disclosed by Dougherty.

The motivation for doing so would have been to make the dots invisible to the user (Dougherty; col. 5, lines 35-37), thus not distracting the user from the image being displayed.

With respect to claim 19, Yanagisawa discloses, a non-touch panel input device (fig. 2) comprising:

a display panel (11 and 21 in fig. 2) having a pixel array, wherein the pixel array at least comprises a plurality of first pixel structures (fig. 8) with each pixel structure at least comprising:

a sub-pixel (display pixel in fig. 8), adapted for displaying a color in the visible light spectrum (para. 45);

a first strip-shaped shadow pixel (group of dots aligned along the y-axis in 32xi for example; each individual dot can be seen as an individual shadow sub-pixel; when combined they form a shadow pixel), longitudinally positioned on and extending along a first side of the sub-pixel (clear from fig. 8), wherein the first strip-shaped shadow pixel emits electromagnetic radiation either in a first electromagnetic radiation state or in a second electromagnetic radiation state (para. 103, disclose that the dot for a "0" can be a different color than the "1" dot, the use of different wavelengths is equivalent to different radiation states); and

a second strip-shaped shadow pixel (group of dots aligned along the x-axis in 32xi for example), latitudinally positioned on and extending along a second side of the sub-pixel (clear from fig. 8), wherein the second strip-shaped shadow pixel emits electromagnetic radiation either in a third electromagnetic radiation state or in a fourth electromagnetic radiation state such that the third and the fourth electromagnetic radiation state are different from each other (para .103, disclose that the dot for a "0" can be a different color than the "1" dot, the use of different wavelengths is equivalent to different radiation states), and

a sensor (2 in fig. 1) suspended over the display panel (11 and 21 in fig. 1), wherein the sensor is adapted for remotely obtaining a location of the sensor relative to the display (para. 85, for example) by detecting the first electromagnetic radiation state or the second electromagnetic radiation state of the electromagnetic radiation emitted from the first strip-shaped shadow pixel and the third electromagnetic radiation state or

the fourth electromagnetic radiation state of the electromagnetic radiation emitted from the second strip-shaped shadow pixel (clear from fig. 1).

Yanagisawa does not expressly disclose, wherein the electromagnetic radiation is in the invisible portion of the light spectrum.

Dougherty discloses encoding data using a material capable of producing electromagnetic radiation in the invisible portion of the light spectrum (note IR1 in figs. 7 and 8, also col. 10, lines 33-45).

Dougherty and Yanagisawa are analogous art because they are both from the same field of endeavor namely, encoding information onto panel displays for sensing by a corresponding sensor.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the dot color of Yanagisawa with the infrared color disclosed by Dougherty.

The motivation for doing so would have been to make the dots invisible to the user (Dougherty; col. 5, lines 35-37), thus not distracting the user from the image being displayed.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William L. Boddie whose telephone number is (571) 272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Wlb
10/31/07

Sumati Lefkowitz

SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER